

32, Victoria Street,

London. S.W.

3rd November 1897.

Professor Sylvanus Thompson,

Technical College,

Leonard Street,

City Road, E.C.

My dear Professor,

I think we might be mutually beneficial to each other. I wish to conduct a series of experiments to see what can be done by heating various substances at an extremely high temperature under very high pressures. Many years ago I made some experiments in Brooklyn before Professor Vanderw^yide, the father of the well known London photographer. I showed the result of these experiments to Professors John and Henry Draper. They said I had come nearer to making diamonds than any other man that ever lived. At that time my experiments were not conducted under pressure. The globe which I used was nothing more nor less than a very heavy egg-shaped glass affair, perhaps $\frac{1}{4}$ -inch thick, 14 inches in diameter and about 20 inches long. Professor John Draper said that the experiments would

be most interesting providing that I could see what would take place under various pressures. He advised me to make something by which I could mount the pressure as high as I liked.

A great deal has, of course, been said on the subject, but I am not aware that anyone has ever constructed an apparatus on a sufficiently large scale to be of any value. It is true that Parsons has heated carbon very hot and then suddenly placed it under pressure, but what I seek to do is to heat the carbon under an extremely high pressure. I think I am the first man who has ever made a large and strong apparatus. The trouble has always been the expense, but I have constructed an apparatus quite irrespective of the great expense necessary. The apparatus is of tempered steel of the very highest grade that can be made in England, has an outside diameter of about 17 inches and an outside length of about 30 inches. It may be opened and closed at either end, may be tilted in any direction, being mounted on trunnions, and will stand an internal pressure of 10 tons to the square inch safely. It is also provided with a 10-ton gauge, and is so constructed that the carbons may be moved from the outside, the carbon-holders being protected from heat.

I should suppose that it would be necessary

to employ a current of about 50 volts, and from 300 to 600 ampères, and I would like to find where I could obtain a current of this kind, or if you can think of any experiments that you would like to conduct yourself. Of course, an apparatus of this kind, when once made, may be used any number of times without injury, and I am quite willing to allow others to benefit by what may be ascertained from the employment of this apparatus. I believe that it would be possible to obtain many new results, and I think I know of a way by which a very high pressure may be generated and maintained.

I should like to see you on this subject, and if you know of any place where I can obtain the necessary current, I would like to have you put me in the way of getting it. However, I should not like to have my experiments conducted in the presence of too many observers, because you know that all mankind is not honest. What is really required is a moderate ~~size~~ sized room and the necessary current: everything else I have myself.

With kindest regards, believe me, my dear
Professor,

Faithfully yours,

William S. Mayin



~~Maxim~~ TYPESCRIPT L.S. (HIRAM S. MAXIM), 32 Victoria Street, London, S.W., 3rd November 1897, to the same, 3 pages 4to. (80 lines), £3, 3s

LONDON BOTHERAN

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Of great interest in connexion with the production of artificial diamonds, a department of his inventive activity not referred to in *D.N.B.* 'I think we might be mutually beneficial to each other. I wish to conduct a series of experiments to see what can be done by heating various substances at an extremely high temperature under very high pressures. Many years ago I made some experiments in Brooklyn before Professor Vanderwyde, the father of the well known London photographer. I showed the results of these experiments to Professors John and Henry Draper. They said I had come nearer to making diamonds than any other man that ever lived.' . . . All the rest of the letter is on development of this invention.

5790 LYELL (SIR CHARLES, F.R.S., 1797-1875) A.L.S. (CHA. LYELL), 10 Hart St., Dec. 1840

Dec. 1840 [to David Milne-Home], 2¼ pages 8vo., £3, 3s

'I have at length found an opportunity of getting the opinion of Agassiz on your specimens of fish scales which says all belong to one & the same species of *Holoptychus*, the same as that of Clashinnie & he therefore says can be no doubt the rock is Old Red. . . . I have decided on preparing two different maps of Forfarshire one exclusive for the superficial geology, including the transported matter of all kinds, divided into classes, the other subterranean coin a word, assuming the terring to be cleared off the rocks.' . . .

5791 — A.L.S. (CHA. LYELL), 53 Harley St., London W., May 19 1863, to 'My dear [General Sir William] [Codrington], 4 pages 8vo., £2, 15s